NR-GIS Process

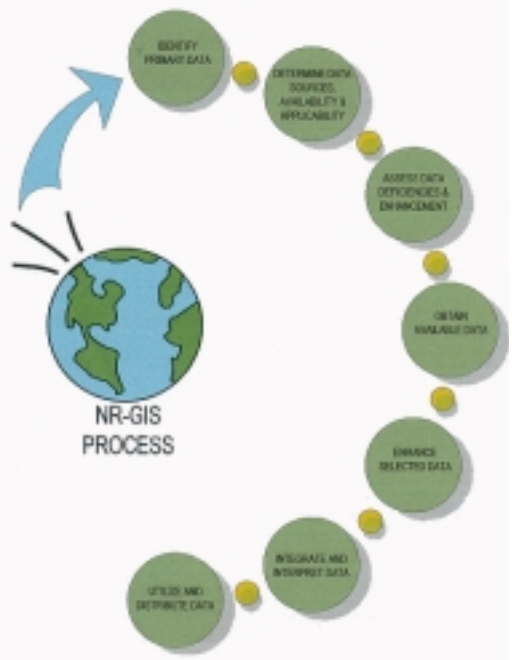
Since its inception in the spring of 2000, the approach used for the creation of the NR-GIS has involved a series of seven steps. These include:

1. Identify Primary Data Research Categories: The first step in the NR-GIS process was to determine the primary research categories in which natural resources information was to be collected. A total of a twelve data research categories were identified:

Soils	Topography
Hydrology	Floodplains
Wetlands	Climate
Fauna/Wildlife	Habitat
Flora/Vegetation	Environmental Quality
Land Use	Modeling-Data Integration

These categories were based upon recognized fields of environmental research and the types of data that would be logically utilized in the community's on-going planning process.

2. Determine Data Availability and Applicability: Once the primary data research categories were identified, the NR-GIS program team inventoried likely sources of digital and non-digital natural resources data for the greater Lancaster County area. This included in-house information that was part of the existing City-County GIS operation, as well as other public and private data sources. Given that one of the stated NR-GIS objectives was to utilize readily available data wherever possible, the initial focus was on digital information within the public domain. This included an extensive search of relevant Internet sites and phone contacts with area researchers likely to have or know of available natural resources data. Potential data sources were cataloged and a preliminary determination made as to the applicability of the data to the NR-GIS effort.



3. Assess Data Deficiencies and Data Enhancement Needs: The initial reconnaissance effort resulted in an extensive list of potential data sources. This list included digital information available at varying degrees of quality, scale, and detail, and potentially valuable data that presently existed only in non-digital form. The NR-GIS program team discussed the merits of each data source and the relative investment that would be required to development and integrate both the digital and non-digital data into NR-GIS.

4. Obtain Available Data The next step in the process was to contact or access those sources of digital natural resources data that was determined by the NR-GIS program team to be relevant and suitable. Pertinent data sets available over the Internet were downloaded and brought into NR-GIS. Phone or letter contacts were made with other potential sources of data requesting copies of the applicable data set.

5. Enhance Selected Data Sets In certain instances desired data sets were out dated, inadequately detailed, lacking in specificity, or were simply unavailable in a digital format. In these cases the NR-GIS program team sought various remedies. These included both digitizing paper data maps and utilizing other available digital data sources to create the desired new data set. As an example of the latter case, the best currently available countywide wetlands digital file is the National Wetlands Inventory (NWI) data set. While this has proven to be an invaluable planning tool, NWI was created in the 1980's. More refined data sets, higher quality imagery, advanced GIS technology, and physical changes that have occurred to the actual landscape indicated the need to update wetland data for the County. This was accomplished through the creation of a new digital database for the City's three-mile jurisdiction using SSURGO Soil data, one-foot ortho-rectified digital imagery, and field visits. This new data set is thus capable of supplementing the NWI information in better defining the location and type of wetlands in Lancaster County.

6. Integrate and Interpret NR-GIS Data Once the various natural resources data sets were brought into the NR-GIS system, they could be compared and interpretations made of the patterns and trends evident in the information. This was accomplished through various techniques involving both in-house and outside experts. A NR-GIS Cabinet composed of a wide range of local resources experts was assembled to assist in interpretation of the aggregate information.

7. Utilize and Distribute NR-GIS Data The NR-GIS data sets have been used to generate several products that will support a range of planning activities. This includes the present Interpretive Summary Report that contains a synopsis of the major natural resources themes and patterns identified by the NR-GIS Cabinet. The NR-GIS information will also be utilized in the preparation of a "Greenprint Plan" for the City and County. Greenprint is a plan for the integrated network of natural areas and open spaces in Lancaster County. Together these efforts of the NR-GIS Summary Report and the Greenprint Plan form the environmental foundation for the preparation of the new City-County Comprehensive Plan.